



PATENT APPLICATION  
Docket No. 2893-017

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Anthony Splaver, et al.                      Confirmation No. 5910  
Serial No.:            10/090,847    Examiner: Barry W. Taylor  
Filed:                    March 4, 2002    Group Art Unit: 2643  
For:                      WEB ACCESS FOR PREPAID/POSTPAID ACCOUNT  
                                 INFORMATION AND SERVICES

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION TO OVERCOME A PRIOR INVENTION  
37 C.F.R. §1.131**

1.        The person making this Declaration is Richard E. Wymore, joint inventor and duly authorized representative of Communications Products Development, Inc., assignee of the above-described U.S. Patent Application No. 10/090,847 ("Application"), by an Assignment executed on March 1, 2002, and recorded in the U.S. Patent and Trademark Office on March 4, 2002, at Reel/Frame 012678/0460.

2.        Certain claims of U.S. Patent Application No. 10/090,847 are currently rejected in view of certain prior art, *inter alia*, U.S. Patent No. 6,694,000 to Ung, et al. The Ung reference has a filing date ("Effective Date") of April 11, 2000.

3.        Conception of the invention that is the subject of the claims in the present application occurred prior to the Effective Date of the Ung patent as evidenced by attached Exhibits A, B and C documents submitted internally at Communications Product Development, Inc. prior to the Ung Effective Date of April 11, 2000.

Exhibit A: Internal document entitled "Patent Ideas for New Products"  
(March 9, 2000)

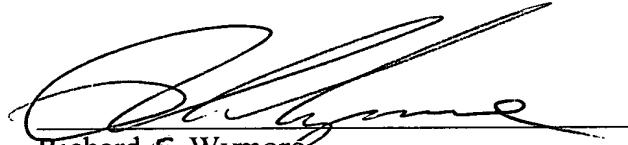
Exhibit B: Internal email from joint inventor, Anthony Splaver, scheduling  
meeting to discuss Prepaid Internet Dialup Access (PIDA) Project  
(March 13, 2000)

Exhibit C: Provisional Patent Application documents for Prepaid Internet  
Kiosk (PIK) invention (March 23, 2000)

4. Work on the invention was conducted continuously from a date prior to the  
Effective Date, until the date of filing of the above referenced patent application, and  
thereafter.

I hereby declare that all statements made herein of my own knowledge are true and  
that all statements made on information and belief are believed to be true; and further that  
these statements were made with the knowledge that willful false statements and the like so  
made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the  
United States Code, and that such willful false statements may jeopardize the validity of the  
application or any patent issued thereon.

Dated: 9/15/05

  
Richard E. Wymore



Title	Patent Ideas for New Products	Date	3/9/2000
Author	Tony Splaver	Revision	Draft 1
File	Patent Ideas for New Products2.doc	Page	1 of 2

# Patent Ideas for New Products

## Prepaid Internet Kiosk

### **Browser and email**

The Prepaid Internet Kiosk (PIK) uses an Internet browser and an email client in one consolidated computer program. The PIK is executed on a centralized Terminal Server to provide a single point for software administration and updates. The kiosks are Windows-based Terminals and are connected to the Terminal Server.

### **Notifications**

Notifications are sent to the administrative workstation and to the PIK browsers via Microsoft Distributed Component Object Model (DCOM). Notifications are sent to the browser when the time remaining is low and when the Internet connection degrades. Notifications are sent to the administrative workstation when the Internet connection degrades, user requested help, fraudulent use, and printer errors.

### **Rating**

The rating for PIK allows account rating, group rating, and default rating. Rates can be established for all features of the PIK (like laser print, color printing, online time, email, and downloading files). The rating system also allows surcharges, charge for full interval, and minimum charges. The rating system provides rating for day of week, date, holidays, and time of day.

### **Multiuse accounts**

The PIK, Prepaid Internet Dialup Access, Call Control, Phoenix, and ePrepaid applications can use the same account. The account is locked in all application to prevent simultaneous use, and all accounts are updated from a master account.

## Prepaid Internet Dialup Access

### **Desktop time remaining and warnings**

The Prepaid Internet Dialup Access (PIDA) sends information to the dialup user's desktop. The amount of time remaining, online time, and warnings are sent over the Internet to the dynamic IP address (assigned by the ISP NAS) of the dialup user. The desktop application listens for these messages and display the information on the desktop.



Title	Patent Ideas for New Products	Date	3/9/2000
Author	Tony Splaver	Revision	Draft 1
File	Patent Ideas for New Products2.doc	Page	2 of 2

### **Radius Server to provide prepaid access**

The Radius Server is used to get the connection and disconnection information from the ISP NAS. This information is used to provide the prepaid access to the Internet. The fraud protection, rating, decrement technology, and access features all use the Radius Server.

### **Phoenix ( this is a re-write of existing product)**

#### **ActiveX Plugin Framework**

The call agents, system services, and database management system use the ActiveX Plugin Framework. The framework uses a MDI parent that creates MDI children forms on the fly. These children forms create ActiveX controls on the fly. These ActiveX controls contain all of the user interface components for each major feature of the system. The business logic and database logic are isolated in separate classes and DLLs. This framework provides a common user interface, reuse of components, and extensibility.

#### **MGCP gateway and call agent**

The MGCP gateway is used to isolate the call agent from the telephony hardware. The call agent contains the state logic to drive the application, and the gateway provides a hardware independent control over the telephony hardware. We can use the same call agent with Dialog boards, Acculab boards, Excel switches, or any other custom switch without impacting the call agent.

> ----- Original Message -----  
> From: "Tony Splaver" <tony@cpdi.com>  
> To: "Barbara Bryant-Inman" <barbb@cpdi.com>; "Dan Kinney" <dan@cpdi.com>;  
> "Kari Rosenberg" <karir@cpdi.com>; "Larry Maaske" <larrym@cpdi.com>;  
> "Linda  
> Cramer" <lindac@cpdi.com>; "Rick Wymore" <rickw@cpdi.com>; "Rusty  
> Bennet" <rustyb@cpdi.com>; "Scott Spangenberg" <scotts@cpdi.com>;  
> "Dave Mansfield" <davem@cpdi.com>; "Eric Bjorkman" <eric@cpdi.com>;  
> "Jonathan Coombs" <jonathan@cpdi.com>; "Minh Nguyen" <minhn@cpdi.com>;  
> "Paul Lord" <paull@cpdi.com>  
> Sent: Monday, March 13, 2000 1:21 PM  
> Subject: PIDA Meeting  
>  
>  
> > Hello,  
> >  
> > I'm sorry for the short notice, but we need to have a meeting  
> > Tuesday,  
> > March  
> > 14 at 8:30am to present an overview of the Prepaid Internet Dialup  
> Access  
> > (PIDA) project. The meeting should only require 30 minutes.  
> >  
> > AGENDA:  
> > 1. PIDA project overview  
> >    A. PIDA features  
> >    B. PIDA technologies  
> > 2. High risk areas  
> > 3. Schedule  
> > 4. Questions  
> >  
> > Tony  
> >  
> > ---  
> > Tony Splaver  
> > CPDI  
> > (360) 694-2977  
> > tony@cpdi.com  
> >  
> >  
>  
>  
>

**Provisional Patent Application**

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Camas, Washington 98607  
USA

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18410 SE Miarly Lane  
Clackamas, Oregon 97015  
USA

Title: Prepaid Internet Access

Attorney: Scott A. Schaffer, Marger Johnson & McCollom

Address: 4201 NE 66<sup>th</sup> Avenue, Suite 105  
Vancouver, WA 98661

Filing Date: March 24, 2000



Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	2 of 23

# Provisional Patent Application

## Summary of the Invention

The Prepaid Internet Access invention has two software applications that provide access to the Internet. The invention provides the ability to access the Internet in a kiosk environment with the Prepaid Internet Kiosk (PIK) software application. The invention provides the ability to access the Internet via an Internet Service Provider (ISP) with the Prepaid Internet Dialup Access (PIDA) software application.

Both software applications share features that give the user many capabilities that are not available with the standard Internet access technology. The Prepaid Internet Access invention includes the on-screen display of browsing time remaining, low time remaining warnings, flexible rating, fraud protection, decrement technology, and value-added features.



Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	3 of 23

## Drawings

Figure 1

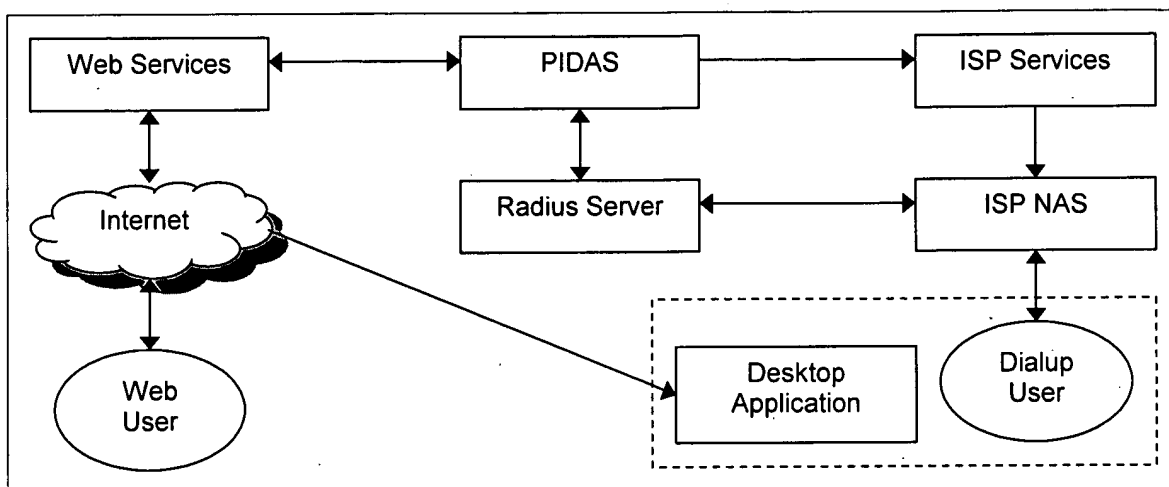
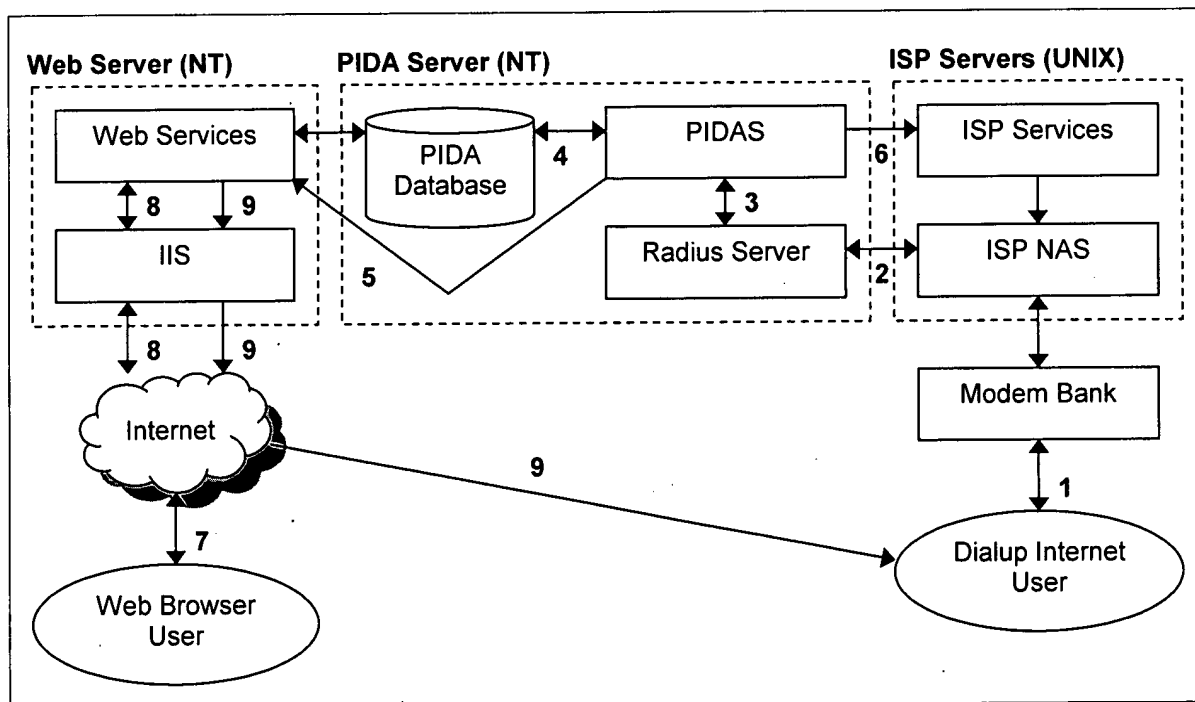


Figure 2

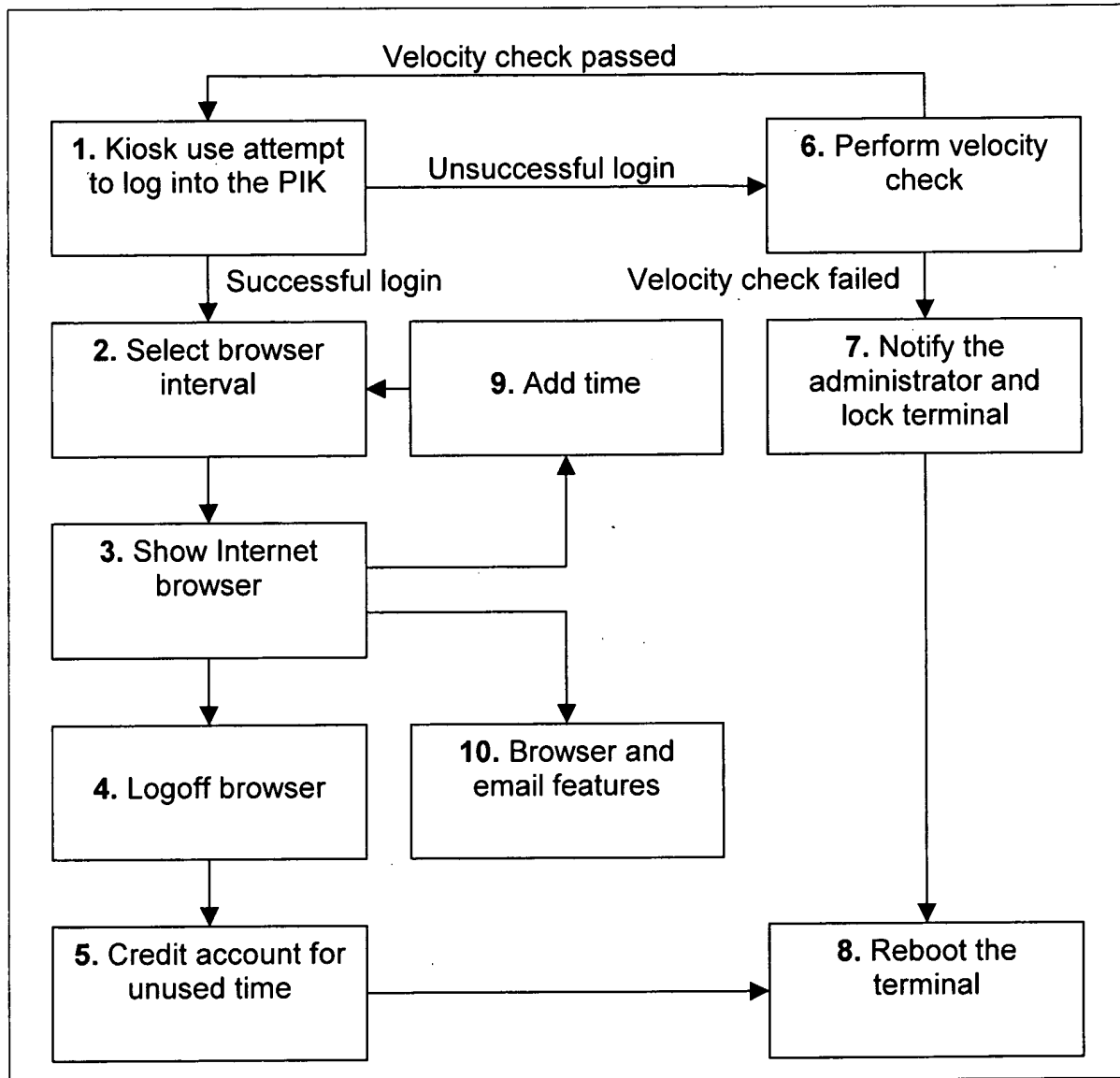






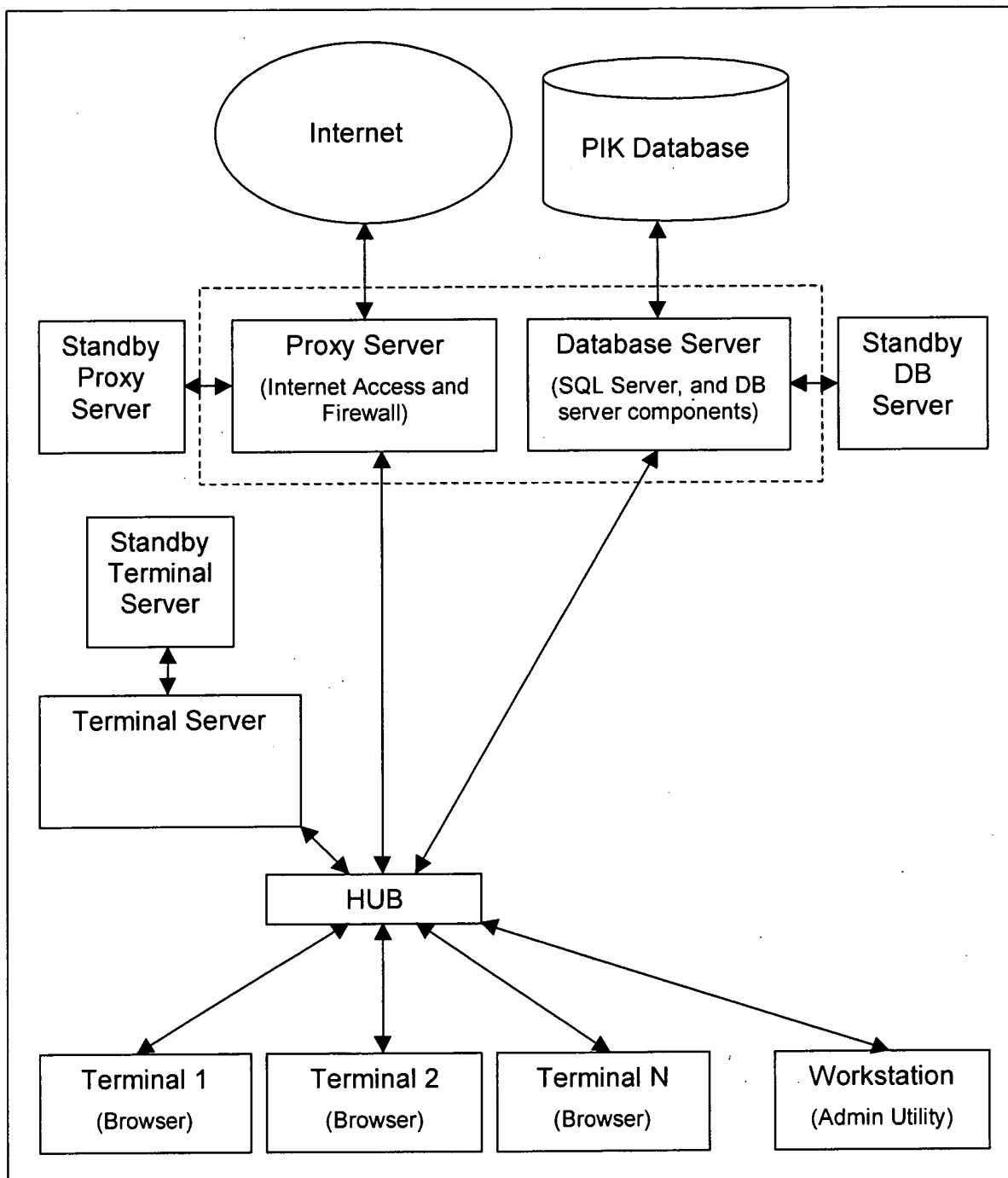
Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	4 of 23

Figure 3



Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	5 of 23

Figure 4





Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	6 of 23

Figure 5

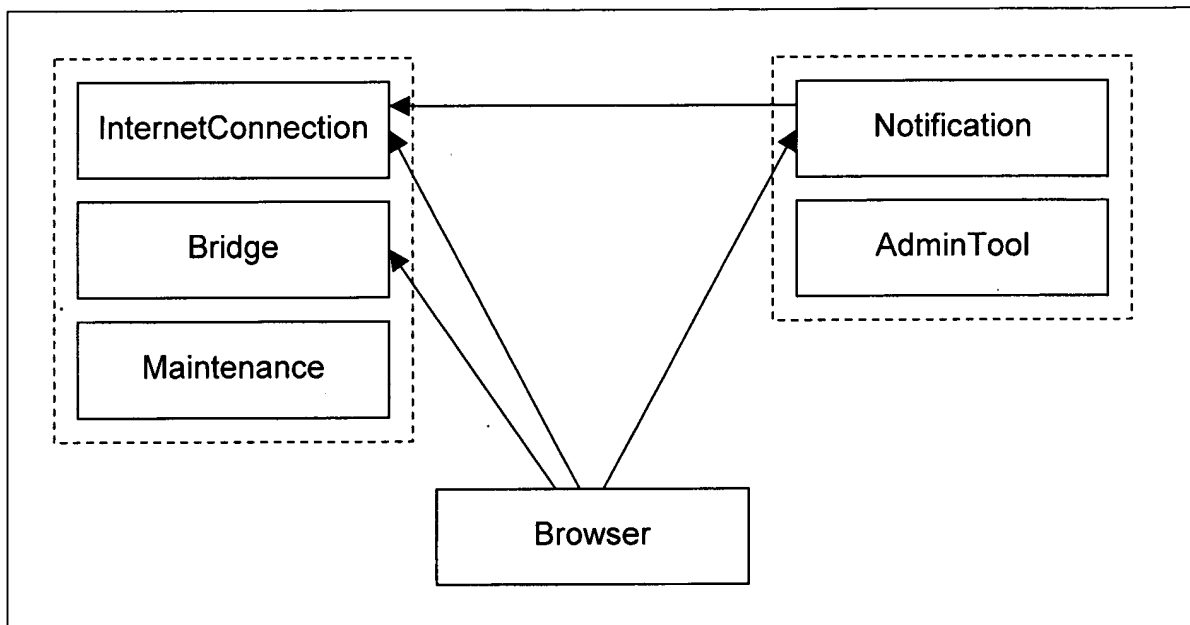
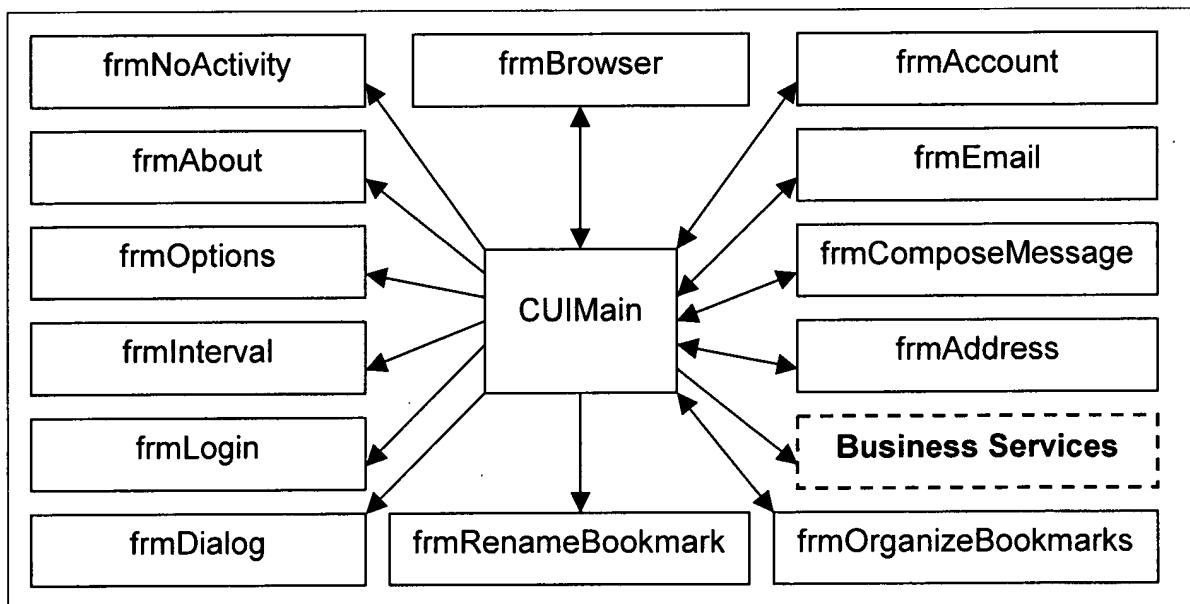


Figure 6





Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	7 of 23

Figure 7

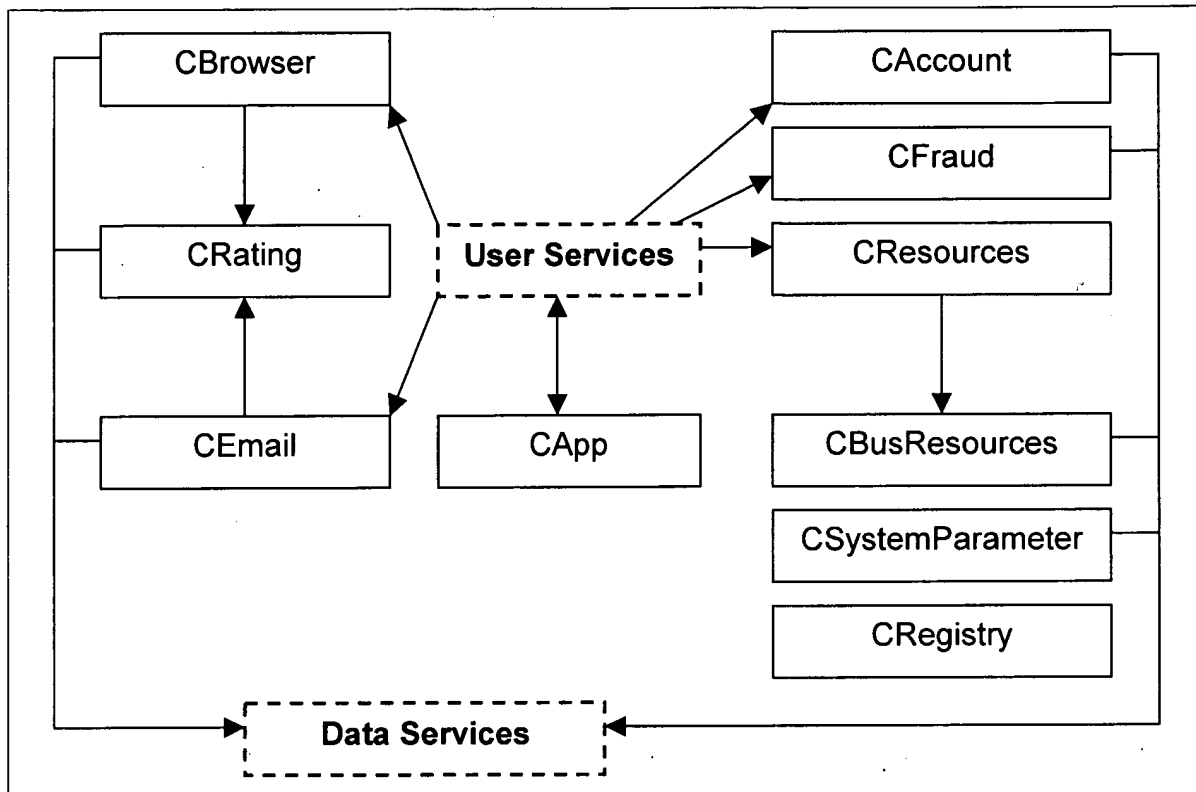


Figure 8

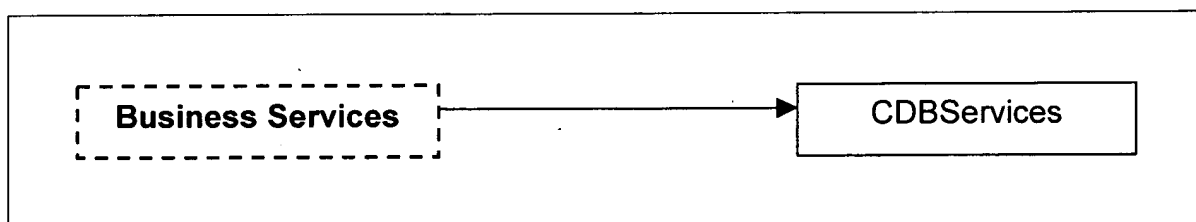
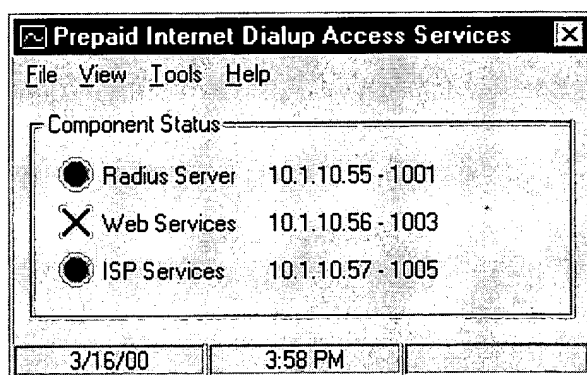


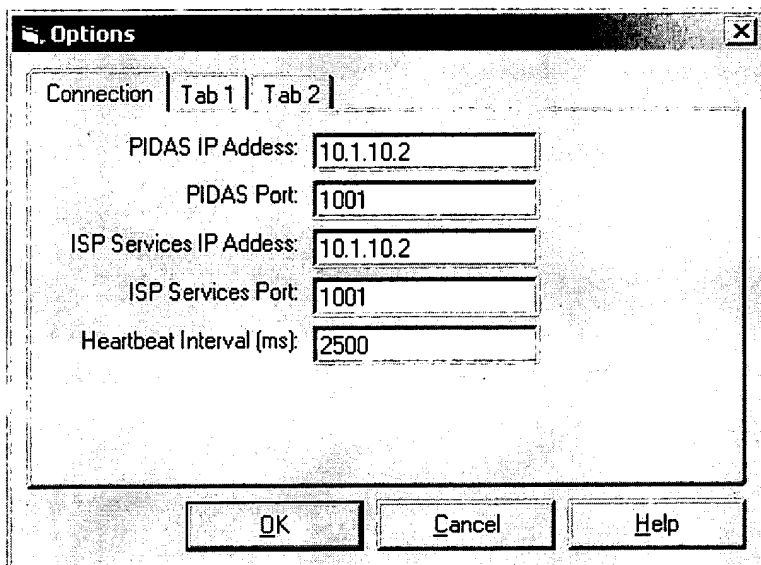
Figure 9





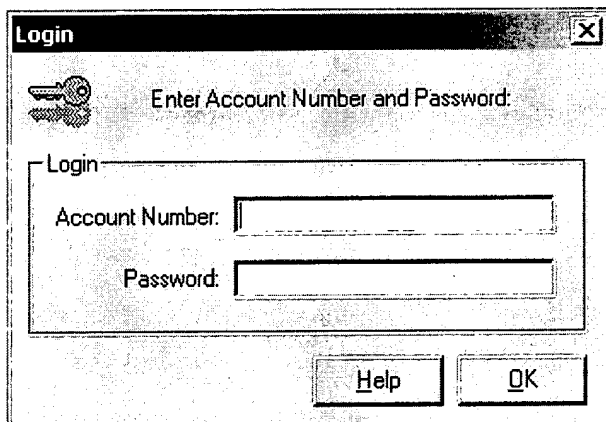
Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	8 of 23.

Figure 10



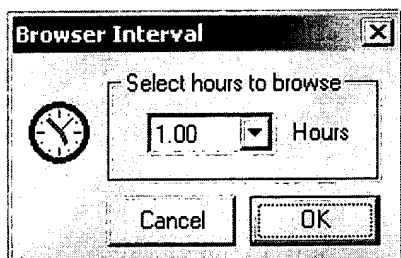
The Options dialog box has a title bar with a close button. It contains two tabs: "Connection" and "Tab 2". The "Connection" tab is selected. Inside the tab, there are five input fields with labels: "PIDAS IP Address:" (10.1.10.2), "PIDAS Port:" (1001), "ISP Services IP Address:" (10.1.10.2), "ISP Services Port:" (1001), and "Heartbeat Interval (ms):" (2500). At the bottom, there are three buttons: "OK", "Cancel", and "Help".

Figure 11



The Login dialog box has a title bar with a close button. It features a key icon and the text "Enter Account Number and Password:". Below this, there is a "Login" label and two input fields: "Account Number:" and "Password:". At the bottom, there are two buttons: "Help" and "OK".

Figure 12



The Browser Interval dialog box has a title bar with a close button. It contains a clock icon and the text "Select hours to browse". Below this, there is a numeric input field showing "1.00" and a dropdown menu with "Hours" selected. At the bottom, there are two buttons: "Cancel" and "OK".



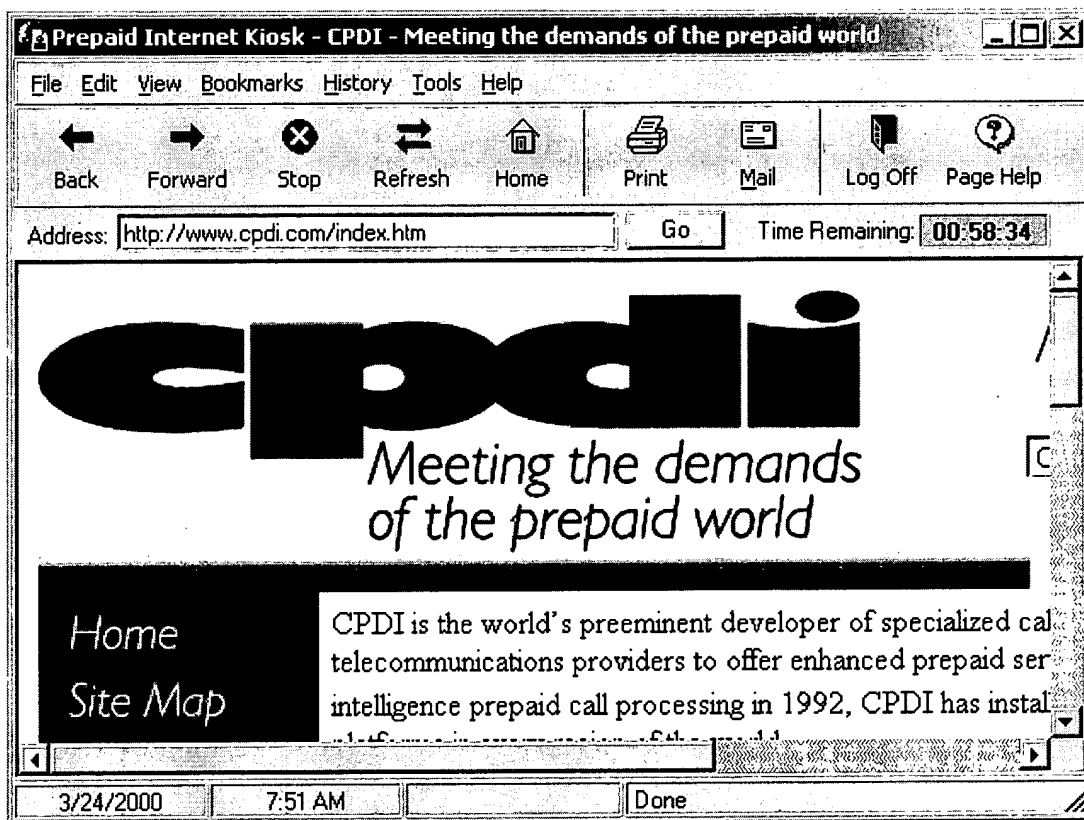
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Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	9 of 23

Figure 13





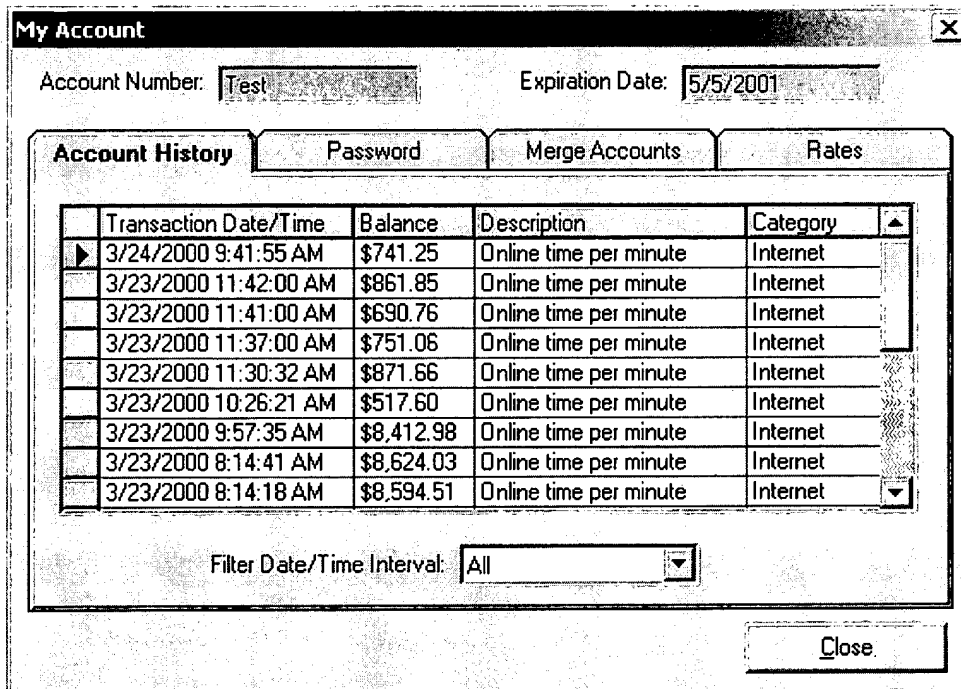
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Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	10 of 23

Figure 14



**My Account**

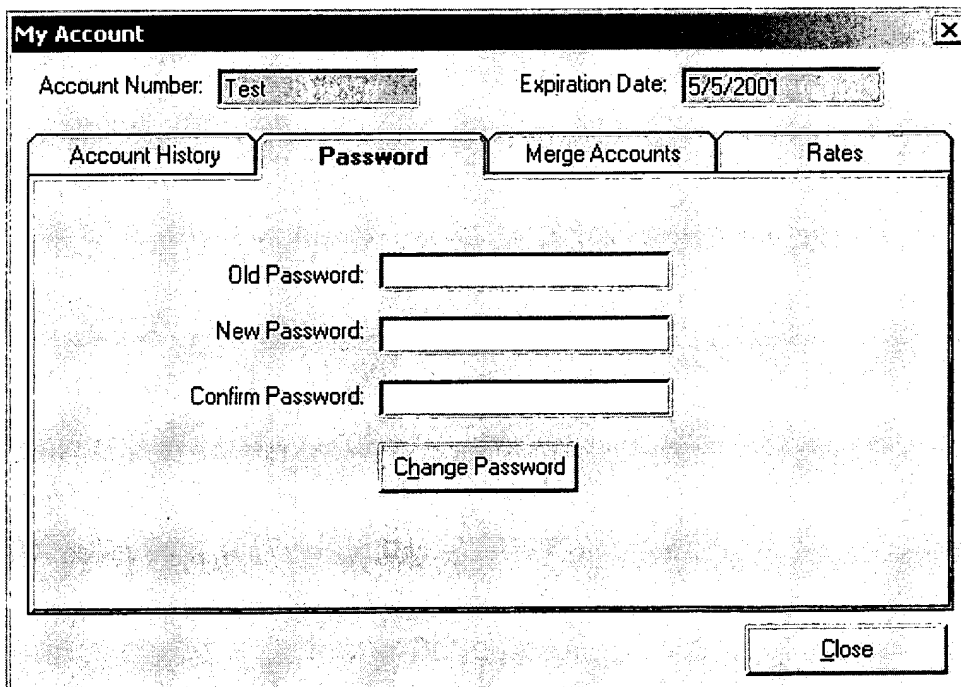
Account Number:  Expiration Date:

**Account History** | Password | Merge Accounts | Rates

	Transaction Date/Time	Balance	Description	Category
▶	3/24/2000 9:41:55 AM	\$741.25	Online time per minute	Internet
	3/23/2000 11:42:00 AM	\$861.85	Online time per minute	Internet
	3/23/2000 11:41:00 AM	\$690.76	Online time per minute	Internet
	3/23/2000 11:37:00 AM	\$751.06	Online time per minute	Internet
	3/23/2000 11:30:32 AM	\$871.66	Online time per minute	Internet
	3/23/2000 10:26:21 AM	\$517.60	Online time per minute	Internet
	3/23/2000 9:57:35 AM	\$8,412.98	Online time per minute	Internet
	3/23/2000 8:14:41 AM	\$8,624.03	Online time per minute	Internet
	3/23/2000 8:14:18 AM	\$8,594.51	Online time per minute	Internet

Filter Date/Time Interval:

Figure 15



**My Account**

Account Number:  Expiration Date:

**Account History** | **Password** | Merge Accounts | Rates

Old Password:

New Password:

Confirm Password:



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Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	11 of 23

Figure 16

My Account window showing Account Number: Test, Expiration Date: 5/5/2001. The Merge Accounts tab is selected, displaying fields for Account Number, Password, and Balance, along with Clear, Show Balance, and Merge buttons.

Figure 17

My Account window showing the Rates tab. The table displays rates and surcharges for Internet and EMail categories.

	Rate	Surcharge	Description	Category
▶	\$2.01	\$0.00	Online time per minute	Internet
	\$2.02	\$0.00	Data per kilobyte	Internet
	\$2.03	\$0.00	Download	Internet
	\$2.04	\$0.00	Download per kilobyte	Internet
	\$2.05	\$0.00	Conn. download to floppy	Internet

	Rate	Surcharge	Description	Category
▶	\$2.10	\$0.00	Online time per minute	EMail
	\$2.10	\$0.00	Email sent	EMail
	\$2.10	\$0.00	Data per kilobyte sent	EMail
	\$2.10	\$0.00	Attachment sent	EMail
	\$2.11	\$0.00	Attachment data per kilobyte sent	EMail





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Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	12 of 23

Figure 18

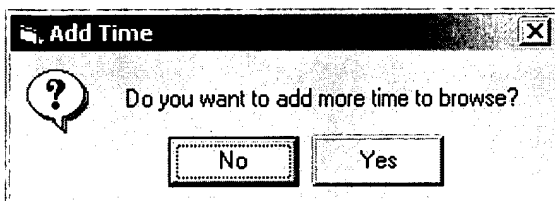


Figure 19

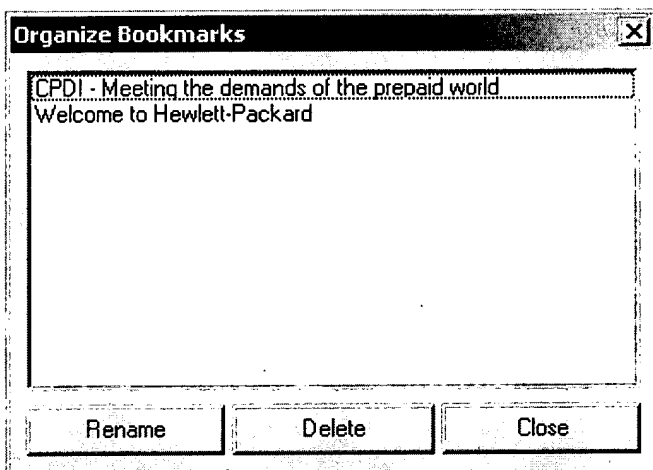
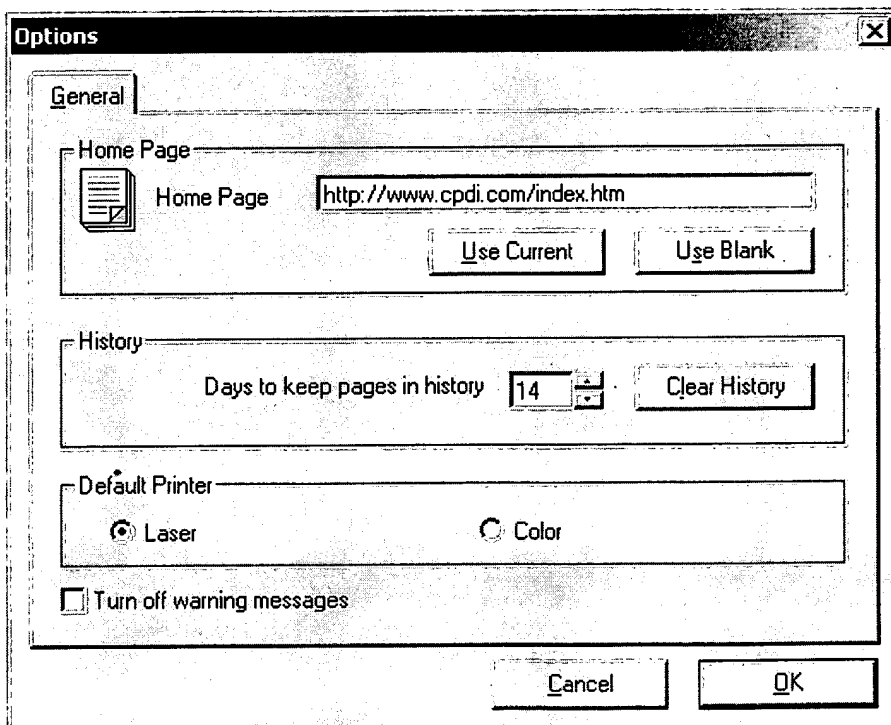


Figure 20





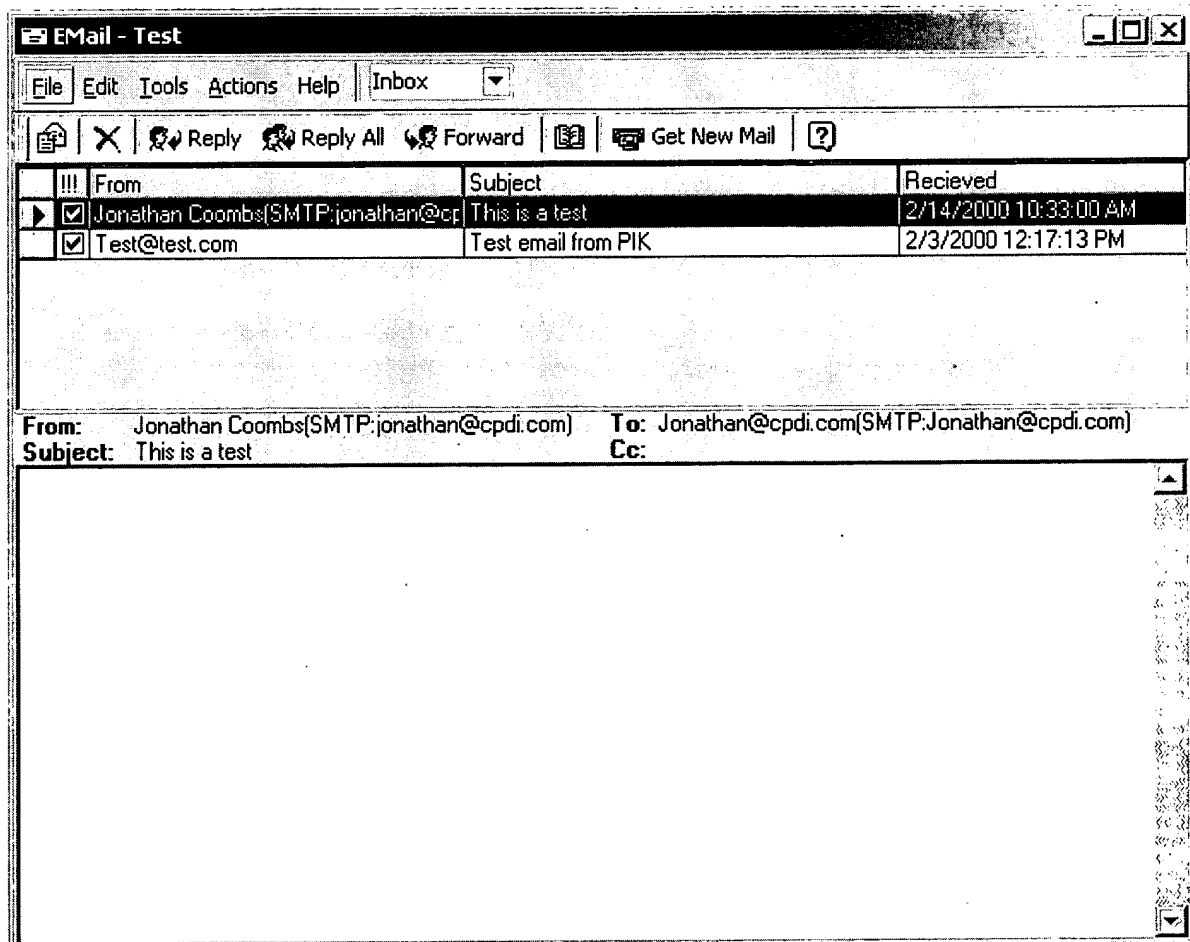
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Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	13 of 23

Figure 21





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Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	14 of 23

Figure 22

**Compose Message**

File Edit Tools Help

Send [Book Icon] [Question Mark Icon]

To: [Empty Field]

Cc: [Empty Field]

Subject: [Empty Field]

☒ Save a copy to your Sent Mail folder.

[Large Empty Text Area]



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Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	15 of 23

Figure 23

**Address Book**

Name:  E-mail Address:

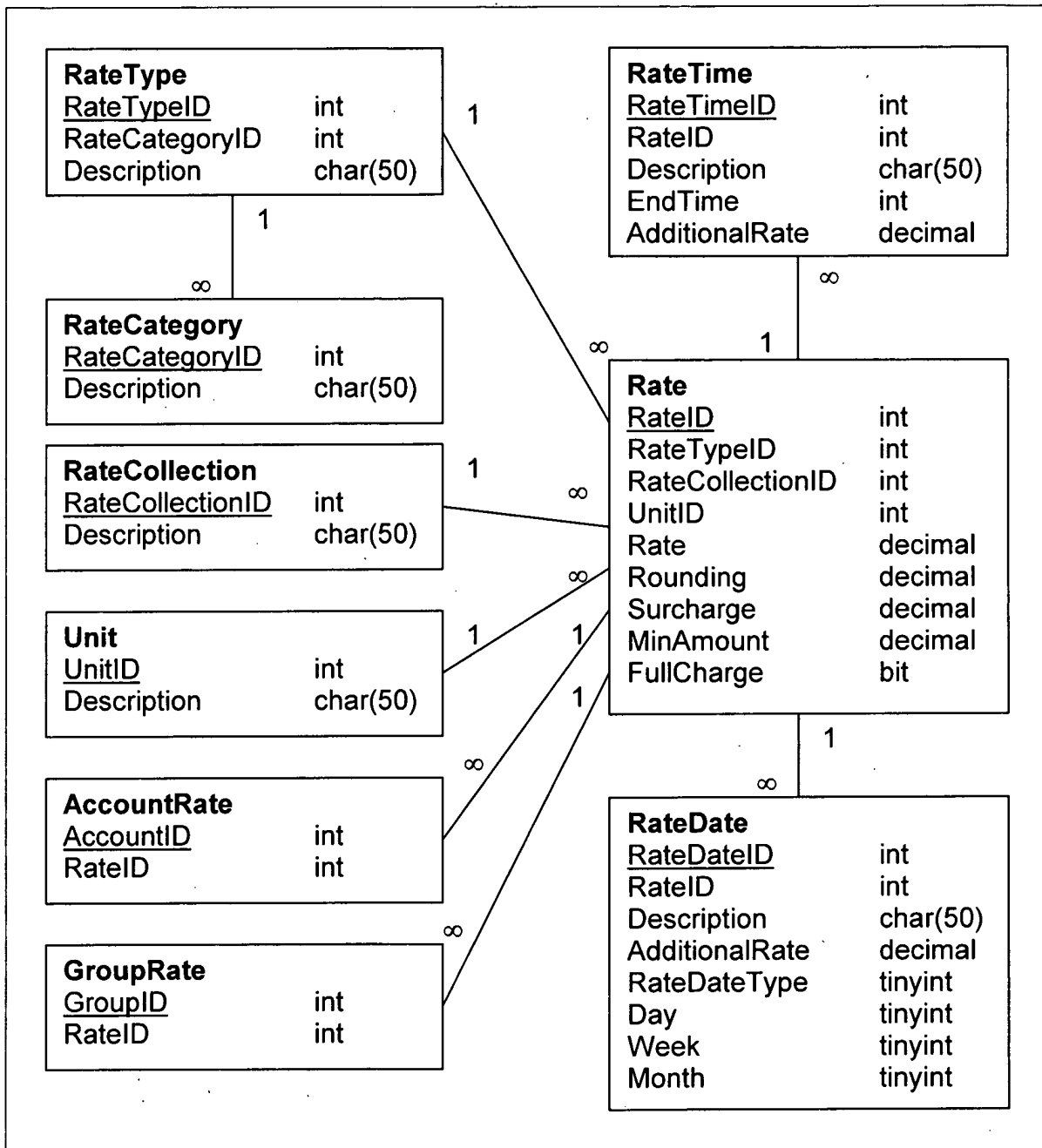
Notes:

	Name	Address	Notes
▶	Test	test@cpdi.com	
	Test2	test2@cpdi.com	test 2
	Tony Splaver	tony@cpdi.com	Tony Splaver



Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	16 of 23

Figure 24





Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	17 of 23

## Brief Description of the Drawings

Figure 1 is the block diagram for the Prepaid Internet Dialup Access functional components.

Figure 2 is the program flow chart of the interactions between the Prepaid Internet Dialup Access components.

Figure 3 is the program flow chart for the Prepaid Internet Kiosk.

Figure 4 is the network topology diagram from the Prepaid Internet Kiosk.

Figure 5 is the block diagram of the functional components for the Prepaid Internet Kiosk.

Figure 6 is the model for the user services of the Prepaid Internet Kiosk browser.

Figure 7 is the model for the business services of the Prepaid Internet Kiosk browser.

Figure 8 is the model for the data services of the Prepaid Internet Kiosk browser.

Figure 9 is the main user interface for the Prepaid Internet Dialup Access Services.

Figure 10 is the options dialog box for the Prepaid Internet Dialup Access.

Figure 11 is the login dialog box for the Prepaid Internet Kiosk that allows the user to enter their account number and password.

Figure 12 is the browser interval dialog box for the Prepaid Internet Kiosk that allows the user to select a browser interval.

Figure 13 is the browser window for the Prepaid Internet Kiosk. The browser window allows the user to browse the Internet, and shows the browsing time remaining.

Figure 14 is the account history tab of the my account dialog box for the Prepaid Internet Kiosk.

Figure 15 is the password tab of the my account dialog box for the Prepaid Internet Kiosk.

Figure 16 is the merge accounts tab of the my account dialog box for the Prepaid Internet Kiosk.

Figure 17 is the rates tab of the my account dialog box for the Prepaid Internet Kiosk.

Figure 18 is the add time message box for the Prepaid Internet Kiosk that allows the user to add more time to their browser session.

Figure 19 is the organize bookmarks dialog box for the Prepaid Internet Kiosk that allows the user to rename and delete bookmarks.

Figure 20 is the options dialog box for the Prepaid Internet Kiosk that allows the user to set the options for the browser.

Figure 21 is the email window for the Prepaid Internet Kiosk that allows the user to view and send emails.



Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	18 of 23

Figure 22 is the compose message dialog box for the Prepaid Internet Kiosk that allows the user to create new email messages.

Figure 23 is the address book dialog box for the Prepaid Internet Kiosk that allows the user to manage their email address book.

Figure 24 is the rating database schema for the Prepaid Internet Kiosk and the Prepaid Internet Dialup Access.



Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	19 of 23

## Detailed Descriptions of the Invention

The Prepaid Internet Dialup Access (PIDA) software program allows users to dial into an Internet Service Provider (ISP) and use a prepaid account to access the Internet.

The general architecture for the PIDA relies on isolated components interacting via TCP or UDP messaging. Figure 1 shows the five components of the PIDA are the ISP Services, Radius Server, PIDAS, Web Services, and Desktop Application.

The ISP Services provides the PIDAS with the ability to disconnect a user. This is required because the PIDAS determines when a user is out of time.

The Radius Server provides the connection and disconnection events from the Network Access Server. The Radius Server uses the PIDAS to validate the users.

The Prepaid Internet Dialup Access Services (PIDAS) provides the business logic for the PIDA project. The PIDAS provides the rating, fraud protection, decrement technology, administrative notifications, and account maintenance.

The Web Services provides the data for the web pages and sends connection information to the desktop application.

The Desktop Application runs on the user's computer, and displays the time remaining and warning messages. The Desktop Application receives information over the Internet from the Web Services.

The PIDAS is the central component, and the PIDAS sends messages via the Winsock controls on the main form. This section contains the specifications for these messages.

The Heartbeat message is sent to the Radius Server, Web Services, and ISP Services. All Heartbeat message expect a reply message within the timeout period. The PIDAS is the only component that sends the Heartbeat message.

When the time remaining for a dialup user decrements to zero, the Disconnect message is sent to the ISP Services to disconnect the user.

When the Connect message is received form the Radius Server, the Connect message is sent to the Web Services. This provides the Web Services with the information required to send information to the desktop application and to display connection information with web pages.

When the Disconnect message is received form the Radius Server, the Disconnect message is sent to the Web Services.

The PIDAS is the central component, and the PIDAS receives messages via the Winsock controls on the main form. This section contains the specifications for these messages.

When the ISP NAS receives a login request from a dialup user, a message is sent to the Radius Server. This message is passed through to the PIDAS for validation.

When a dialup user terminates the dialup connection the Disconnect message is received from the Radius Server.





Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	20 of 23

When the user submits a request to change their account settings, the Change Account Setting message is received from the Web Services.

Figure 2 is a flow chart that shows the interaction between the PIDA components. The interactions are described below.

1. The user dials into the ISP.
2. The ISP Network Access Server asks the Radius Server for validation of the user.
3. The Radius Server uses the PIDAS to determine if the user is valid.
4. The PIDAS uses the database to validate users and to log activity.
5. The PIDAS updates the Web Services with information about the users that are actively logged in. This allows a dialup Internet user to view current information via the Internet (see number 8), and the Web Services can send warnings and time remaining information to the desktop application (see number 9).
6. The PIDAS can disconnect users when their time runs out.
7. A web browser user can remotely view their account information and current time remaining via a web site.
8. The IIS server will present the web pages that are created by the Web Services to show the account information and current time remaining for users.
9. The Web Services can send warnings and time remaining information to the desktop application via the IP address of the dialup user.

Figure 9 shows the main form can be displayed by selecting the Display option from the menu of the system tray icon for the PIDAS. Status information about the PIDAS system is displayed in the window, and the menu bar and toolbar provide access to the features.

Figure 10 shows the Options dialog box allows the administrator to configure the PIDAS.

The Prepaid Internet Kiosk (PIK) allows users to browse the Internet with a kiosk with a prepaid account.

A requirement for the PIK is that of pre-selecting the anticipated connect time to the Internet, thus insuring that the account has sufficient funds for the session. Once that amount has been set aside, the balance of the account can then be used for other goods and services.

This is done when the user signs on to the system and entering an active prepaid account number. A screen will then be presented for the user to select how much of the prepaid account value that the user would like to set aside for Internet access. The amount of time for that selection will vary depending on the total account balance. It will never display more than the amount in the account divided by the rate for access set by the system provider (variable rating perimeters). Increments of that time period can then be chosen. As an example 15 minutes, 30 minutes, 1 hour, 2 hours, etc. The time remaining will then be displayed continuously on the computer screen.



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Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	21 of 23

With the funds that are remaining on the account (not set aside for access), other services can then be purchased. These items could be such as; printing, sending/receiving faxes and e-mail, downloading files, storage of information to disk, the purchase of items over the Internet, and other similar goods and services.

Once the user terminates (or is disconnected) the Internet connection, assuming that the per-selected time has not expired, the balance of the time will be credited back to the account at the rate determined. When the user logs off, the amount of time that is credited back to the account is limited by the minimum charge amount and the charge for full amount setting. The charge for full amount setting allows the administrator to create accounts that do not credit the remaining time/money back to the account when the user logs off.

Figure 3 shows the program flow for the PIK. Block 1 shows the kiosk user attempting to log into the system. If the login was successful (valid account number and password), then the user can select an interval time for browsing. If the login was not successful, then block 6 performs the velocity check to prevent fraud. If there is no fraudulent use then the user is allowed to login again (block 1), otherwise the terminal is locked and the account is disabled and the administrator is notified (block 7). The browser window is displayed in block 3 after the user selects a browsing interval. The user can perform many value-added features (see list in the next paragraph) in block 10. Block 4 shows the user requesting to logoff the system. Block 5 will credit the appropriate amount for the unused time. The terminal is rebooted in block 8 after the user logs off or after fraudulent activity.

The PIK has many value-added features. These features include, the time remaining display, the IE 5 interface, bookmarks, history user customization of browser, low time remaining warnings, viewing current balance, changing the password, merging accounts, rating information, viewing account audit history, deletes account and email data after the balance is zero for a specified period, no activity warnings, embedded banners, localization, color printing, laser printing, stop time remaining timer if the Internet connection goes down, copy downloaded files to floppy or CD, account velocity checks, simultaneous use, random account numbers, bad accounts for locking out accounts, online time rating, surcharge rating, charge for full interval rating, minimum charge/time rating, reimburse for unused online time, printing rating, download rating, send emails, receive emails, address book, limit email space, print emails, per email for sending rating, per email byte for sending rating, per email for receiving rating, per email byte for receiving rating, email printing rating, per byte for extra email storage rating, administrative tools, user requested help notification, fraudulent use notification, internet connection goes down notification, printer out of paper notification, update balances between PIK database and call control database, limit bandwidth per kiosk, account rating, group rating, default rating, override rating,

Figure 4 shows the network topology for the PIK system. Each block represents a separate computer. The Proxy and Database server can be combined in one computer. There are other ways to configure the PIK system, but this method provides redundancy (with the standby servers) and isolation between the terminal server, database server, and proxy server.



Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	22 of 23

Figure 5 shows a high level view of the functional components of the PIK system. The browser creates an instance of the InternetConnection to determine if the Internet connection is going down. The browser creates an instance of the Bridge to provide the multiuse accounts. The browser creates an instance of the Notification to provide the link between the browser and the administrative workstation (to allow the user to page for help from the browser). The AdminTool allows the administrator to create and manage accounts. The Maintenance program runs in the background and performs maintenance on the database (like removing old accounts).

The PIK system uses an object-oriented design. Figure 6 shows the user services model for the PIK browser. Each block in the user services represents a class or window that performs the user interface features. Figure 7 shows the business services model for the PIK browser. Each block in the business services represents a class that performs the business logic. Figure 8 shows the data services model for the PIK browser. Each block in the data services represents a class that performs database services.

Figure 11 shows the login dialog box for the PIK. The user must enter a valid account number and password. If the account number or password is not valid, then the velocity check will determine if fraudulent activity is occurring.

Figure 12 shows the browser interval dialog box. The user must select from the list of intervals. The list will show the intervals that are valid for the current account.

Figure 13 shows the browser window. The browser window allows the user to navigate to web sites on the Internet. The back and forward buttons allow the user to move back to the previous web page or forward to the next web page. The stop button will stop the browser from downloading the data from the web site. The refresh button will reload the current web page. The home button is used to navigate back a select web page that the user can configure. The print button prints the current web page to the select printer. The mail button shows the email window. The log off button is used to end the current session. The page help button will notify the administrator that you need help.

The My Account dialog box is displayed from the File menu. Figures 14, 15, 16, and 17 show the My Account dialog box. The user can view the account history, change their password, merge accounts, and view their rates.

The user can add more time to their current session by select the Add Time option from the File menu. Figure 18 shows the add time message box. If the decides to add more time, then the browse interval dialog box is displayed (Figure 12).

The user can rename and delete bookmarks with the organize bookmarks dialog box. Figure 19 shows the organize bookmarks dialog box. The PIK allows the administrator to configure the maximum number of bookmarks that each user can save.

Figure 20 shows the options dialog box for the PIK. The user can change their home page, change the number of days to keep history pages, set the default printer, and turn off warning messages.



Title	Provisional Patent Application	Date	3/23/2000
Author	Tony Splaver	Revision	1
File	Provisional Patent Application 3-24-001.doc	Page	23 of 23

Figure 21 shows the email window. The email window is used to view new and sent emails. The bottom of the window views the select email. The user can also double-click on an email to view it. The user can delete, reply, reply all, or forward an email.

The compose message windows is displayed when the user creates a new email. Figure 22 shows the compose message. The user can use the address book to set the To and CC fields.

Figure 23 shows the address book. The address book allows you to add and delete items from the address book.

Figure 24 shows the database schema for the rating system in the PIK and PIDA. Each group or account is related to the Rate table via the GroutRate and AccountRate tables. Each rate has a RateType that determines what the rate is for. The RateCategory table is used to set rates for the major features (like browsing and email). The RateCollection table is used to group sets of rates together. The Unit table is used to store the types of units used by the Rate table (like currency or units). The RateTime and RateDate tables are used to add (or subtract) extra rate amounts depending on the time of day, date, day, week, and month.